Amendments to the Claims

Listing of Claims:

1. (currently amended) Apparatus comprising a telecentric optical system for transmitting an image to a digital image plane, said telecentric optical system comprising

   (a) telecentric optics which are telecentric in image space,

   (b) at least one planar surface that produces ghost images, said planar surface located in image space after said telecentric optics, and

   (c) said telecentric optical system configured to process image data from the telecentric optics, to determine a characteristic function for the ghost images produced by the planar surface, and to provide correction for the ghost images based on the characteristic function.

2. (currently amended) Apparatus comprising a telecentric optical system for transmitting an image to a digital image plane, said telecentric optical system comprising

   (a) telecentric optics which are telecentric in object space,

   (b) at least one planar surface that produces ghost images, said planar surface located in object space before said telecentric optics, and

   (c) said telecentric optical system configured to process image data from the telecentric optics, to determine a characteristic function for the ghost images produced by the planar surface, and to provide correction for the ghost images based on the characteristic function.

3. (currently amended) Apparatus comprising a telecentric optical system for transmitting an image to a digital image plane, said telecentric optical system comprising

   (a) telecentric optics which have double or [duel] dual telecentricity,

(b) at least one planar surface that produces ghost images, [either one of said planar surfaces] located in image space after said telecentric optics [and or] and/or [the other] another planar surface located in object space before said telecentric optics,

(c) said telecentric optical system configured to process image data from the telecentric optics, to determine a characteristic function for the ghost images produced by the planar surface, and to provide correction for the ghost images based on the characteristic function.

4. (currently amended) A method for providing ghost image correction in a telecentric optical system for transmitting an image to a digital image plane, where the telecentric optical system comprises telecentric optics which are telecentric in image space, and at least one planar surface produces ghost images is located in image space after the telecentric optics, the method comprising the steps of

(a) processing image data from the telecentric optics, to determine[ing] a characteristic function for the ghost images produced by the planar surface, and

(b) providing correction for the ghost images, based upon the characteristic function for the ghost images.

5. (currently amended) A method for providing ghost image correction in a telecentric optical system for transmitting an image to a digital image plane, where the telecentric optical system comprises telecentric optics which are telecentric in object space, and at least one planar surface produces ghost images is located in object space before the telecentric optics, the method comprising the steps of

(a) processing image data from the telecentric optics, to determine[ing] a characteristic function for the ghost images produced by the planar surface, and

3

(b) providing correction for the ghost images, based upon the characteristic function for the ghost images.

6. (currently amended) A method for providing ghost image correction in a telecentric optical system for transmitting an image to a digital image plane, where the telecentric optical system comprises telecentric optics [which are] which h ave d ual t elecentricity, and w herein at l east o ne p lanar s urface that produces g host images is located in image space after the telecentric optics and or another planar surface that produces ghost images is located in object space before the telecentric optics, the method comprising the steps of

    (a) <u>processing image data from the telecentric optics, to</u> determine<u>e</u>[ing] a characteristic function for the ghost images produced by the planar surface, and

    (b) providing correction for the ghost images, based on the characteristic function for the ghost images.

7 (canceled).

8 (currently amended). Apparatus as set forth in claim 1, wherein said [predetermined] characteristic <u>function</u> comprises a weighting function that has been predetermined for the telecentric optical system.

9. (canceled)

10. (new) Apparatus comprising a telecentric optical system for transmitting an image to a digital image plane, said telecentric optical system comprising

    a. telecentric optics which are telecentric in image space,

    b. at least one planar surface that produces ghost images, said planar surface located in image space after said telecentric optics,

    c. said telecentric optical system configured to determine a characteristic function for the ghost images produced by the planar surface, and to provide correction for the ghost images based on the characteristic function;

wherein said telecentric optical system produces image data corresponding to image data from an object, and said correction is configured to sample portions of the image data to produce weighted samples corresponding to the predetermined weighting function, sum the weighted samples to create an approximation to a weighted integral, and then repeat the foregoing steps to compute w eighted i ntegrals f or e ach o f t he i mage e lements, and t hereby to correct the image data.

11. (new) Apparatus as defined in claim 2, wherein said characteristic function comprises a weighting function that has been predetermined for the telecentric optical system, and wherein said telecentric optical system provides correction by sampling portions of the image data to produce weighted samples corresponding to the predetermined weighting function, sum the weighted samples to create an approximation to a weighted integral, and then repeat the foregoing steps to compute weighted integrals for each of the image elements, and thereby to correct the image data.

12. (new) Apparatus as defined in claim 3, wherein said characteristic function comprises a weighting function that has been predetermined for the telecentric optical system, and wherein said telecentric optical system provides correction by sampling portions of the image data to produce weighted samples corresponding to the predetermined weighting function, sum the weighted samples to create an approximation to a weighted integral, and then repeat the foregoing steps to compute weighted integrals for each of the image elements, and thereby to correct the image data

13. (new) A method as set forth in claim 4, wherein the characteristic function comprises a weighting function that has been predetermined for the telecentric optical system, and wherein the correction is provided by sampling portions of the image data to produce weighted samples corresponding to the

predetermined weighting function, summing the weighted samples to create an approximation to a weighted integral, and then repeating the foregoing steps to compute weighted integrals for each of the image elements, and thereby to correct the image data.

14. (new) A method as set forth in claim 5, wherein the characteristic function comprises a weighting function that has been predetermined for the telecentric optical system, and wherein the correction is provided by sampling portions of the image data to produce weighted samples corresponding to the predetermined weighting function, summing the weighted samples to create an approximation to a weighted integral, and then repeating the foregoing steps to compute weighted integrals for each of the image elements, and thereby to correct the image data.

15. (new) A method as set forth in claim 6, wherein the characteristic function comprises a weighting function that has been predetermined for the telecentric optical system, and wherein the correction is provided by sampling portions of the image data to produce weighted samples corresponding to the predetermined weighting function, summing the weighted samples to create an approximation to a weighted integral, and then repeating the foregoing steps to compute weighted integrals for each of the image elements, and thereby to correct the image data.